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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TINKLER, MURIEL S

ART UNIT	PAPER NUMBER
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3691

NOTIFICATION DATE	DELIVERY MODE
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03/29/2012

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 09/736,070	Applicant(s) CRANE, GEORGE C.	
	Examiner MURIEL TINKLER	Art Unit 3691	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2012.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,3,6-14,21,22,27-30,35,37,40-43,48,52,56 and 60-73 is/are pending in the application.
- 5a) Of the above claim(s) 60-73 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,3,6-14,21,22,27-30,35,37,40-43,48,52 and 56 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This office action is in response to Applicant's response filed May 6, 2011. The amendments have been entered and Applicant's arguments have been fully considered. Claims 1, 3, 6-14, 21, 22, 27-30, 35, 37, 40-43, 48, 52, 56 and 60-73 were previously pending. Claims 60-73 were previously withdrawn from consideration. No claims have been added or cancelled. Therefore, claims 1, 3, 6-14, 21, 22, 27-30, 35, 37, 40-43, 48, 52 and 56 have been examined. The rejections are as stated below.

Response to Arguments

1. Applicant's arguments, see page 16, filed December 16, 2011, with respect to the 35 USC 101 Rejection(s) have been fully considered and are persuasive. The Applicant has successfully amended the claims to overcome the 101 Rejection(s). Therefore, the 35 USC 101 Rejection(s) of claims 1, 3 and 12-14 has been withdrawn.
2. Applicant's remaining arguments filed December 16, 2011 have been fully considered but they are not persuasive.
3. The Applicant argues, on page 18, that Pilipovic teaches away from Browning motion. This is plainly false. Pilipovic discusses Brownian motion in column 2 (lines 16-29). There is absolutely no place in Pilipovic stating or inferring that Brownian motion should not be used nor has the Applicant's Representative pointed out a specific location in Pilipovic stating or inferring that Brownian motion should not be use. Therefore, this argument is moot.

Art Unit: 3691

4. The Applicant argues, on page 18, that all conditions must be in one reference for a proper rejection. The Examiner points out that a 35 USC 103 Rejection was made on the claims. And, considering there was no additional clarification or explanation to this argument, the Examiner has reasoned this argument to be moot.

5. The Applicant argues, on page 18, that language was changed in several of the claims removing the words "Brownian motion" among others. The Examiner points out that it is quite clear that amendments were made to the claims in the amendment filed on May 6, 2011. However, the Examiner points out that the amendments made to the claims still refer to the "movements" associated with Brownian motion. This is clear to see from the Applicant's own specification, see pages 2-4.

"A particle subject to Brownian motion is pushed around by the random motions of neighboring particles, and takes time [change in] t to move throughout a circular two-dimensional area of radius r , and can be expected to take 4 [change in] t to cover the circular area of radius $2r$ (including the original area of radius r) because that area is four times the original area (an r -squared relationship). The same is true of, e.g., stock prices... In a trend situation, the absolute magnitude of the price will reveal whether the trend is an upward trend or a downward trend."

6. The Applicant argues, on page 19, that Pilipovic does not show the particulars of multiple time periods or the information found in claims 10 and 11. The Examiner disagrees. More specifically, in the Office Action mailed on June 24, 2011, the Examiner clearly stated that "Pilipovic teaches an apparatus comprising a means for acquiring the data during different time periods, means for comparing the data with calculated values, and means for concluding something about the system (column 7, lines 50-62, column 10, lines 35-59 and claim 41). The Examiner points out that the apparatus found in Pilipovic clearly discloses all of the elements suggested.

Art Unit: 3691

7. The Applicant argues, on page 19, that Pilipovic describes only a bare use of Brownian motions, and does not describe any particulars as defined by this application. The Examiner again points out the Applicant's argument that the amended system does in fact describe pricing in terms of Brownian motion (see paragraph 5 above). Next, the Examiner points out that every claim was rejected using Pilipovic and the Applicant's own specification. Therefore, the combination of admitted prior art by the Applicant and Pilipovic does disclose the claims as presented.

8. The Applicant argues, on pages 19-21, that Pilipovic does not discuss time periods. The Examiner disagrees. It is quite obvious from not only the Abstract and even the figure on the first page that Pilipovic discloses the use of different time periods. But, it is also quite clear that the apparatus used in Pilipovic acquires, compares and draws conclusions about the data obtained during these time periods (see paragraph 6 above).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3691

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1, 3, 6-14, 21, 22, 27-30, 35, 37, 40-43, 48, 52 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art, in view of Pilipovic, U.S. Patent No. 6,456,982.

Regarding claims 1, 3, 6-14, 35, 37, 40-43 and 48: According to Applicant's specification, the concept of Brownian motion provides a formula which describes the movement of a particle which is moving erratically or haphazardly. According to the description, a particle which takes time Δt to move about a radius r , can be expected to take $4\Delta t$ to cover the radius $2r$. Based on this description, one can determine if a particle is following Brownian motion by taking the movement of a particle (r_1) during a first time (Δt), taking a second movement of a particle (r_2) during a second time ($4\Delta t$), and seeing if $2*r_1 = r_2$, as prescribed by the disclosed Brownian motion formula. The exercise is a direct application of the formula. Of course, in the event $2*r_1 = r_2$, as prescribed, it would be obvious to conclude that the particle follows Brownian motion, and the movements are erratic or haphazard.

Therefore, Applicant's admitted prior art teaches beginning at a first initial moment, acquiring data during a first duration, and determining a first range of said data during said first duration; comparing said first range of data during the first initial range to data expected based on Brownian motion during said initial first duration; and when said first range of said data during said initial first duration equals said range of said data expected, based on Brownian motion, during said initial first duration, concluding that the system is varying erratically. Examiner notes that as disclosed in the Applicant's equations above, a first and a second range are compared above by using ratios.

Applicant fails to teach the data representing price in a financial system.

Pilipovic teaches financial price data is typically considered to follow Brownian motion (column 2, lines 16-29), and using simulations to predict future prices (column 2 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Applicant to include applying the known concepts of Brownian motion (now ration analysis) to financial prices, because Pilipovic teaches this very application. The Examiner points out that Brownian motion is currently stated in the rejection, despite being edited out in the amendments, dated May 6, 2011, because the definition of Brownian motion as disclosed in the specification (see paragraph 8):

"[0008] The invention is based on the proposition that if there are no undue outside influences on a financial market, and there is no collusion within the market, prices can be expected to be haphazardly pushed about so as to oscillate around a mean in a manner predicted by Brownian

Art Unit: 3691

motion. A particle subject to Brownian motion is pushed around by the random motions of neighboring particles, and takes time A_t to move throughout a circular two-dimensional area of radius r , and can be expected to take $4A_t$ to cover the circular area of radius $2r$ (including the original area of radius r) because that area is four times the original area (an r -squared relationship)..."

Regarding claims 21, 22, 27-30 and 52: In addition to the teachings as detailed above, Pilipovic teaches an apparatus comprising a means for acquiring the data during different time periods, means for comparing the data with calculated values, and means for concluding something about the system (column 7, lines 50-62, column 10 lines 35-59, and claim 41).

Regarding claims 35-37, 40-43, 48 and 56: The claims are rejected for substantially the same reasons as claims 21, 22, 27-30 and 52 above. Examiner further notes that since the claim language recites "a data feed" and, "a processor". Pilipovic discloses the use of a processor (see fig. 5, element 3) and means for outputting processed data (fig. 5, element 17).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 3691

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MURIEL TINKLER whose telephone number is (571)272-7976. The examiner can normally be reached on Monday through Friday from 8 AM until 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Kalinowski can be reached on (571)272-6771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3691

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Muriel Tinkler/
Primary Examiner, Art Unit 3691